CLAIMS:

1. A method of forming a rotor comprising the steps of:

(i) providing a rotor element formed from steel; and

(ii) welding the rotor element, using a welding process employing a weld metal which comprises: from 0.04 to 0.1% carbon, from 0 to 0.5% silicon, from 0.1 to 0.6% manganese, from 0 to 0.01% sulphur, from 0 to 0.03% phosphorous, from 1.9 to 2.6% chromium, from 0.05 to 0.3% molybdenum, from 0.2 to 0.3% vanadium, from 0.02 to 0.08% niobium, from 1.45 to 2.1% tungsten, from 0 to 0.03% nitrogen, from 0.0005 to 0.006% boron and from 0 to 0.03% aluminium.

2. A method according to Claim 1, wherein the said weld metal comprises at least 0.06% carbon.

3. A method according to Claim 1 or 2, wherein the said weld metal comprises at least 0.3% manganese.

4. A method according to any preceding claim, wherein the said weld metal comprises 0.005% or less sulphur.

5. A method according to any preceding claim, wherein the said weld metal comprises at least 1.7% tungsten.

6. A method according to any preceding claim, wherein the said weld metal comprises at least 0.04% niobium.

7. A method according to any preceding claim, wherein the said weld metal comprises 0.02% or less nitrogen.

8. A method according to any preceding claim, wherein the said weld metal further comprises 0.5% or less nickel.

9. A method according to any preceding claim, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017% phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.

10. A method according to any preceding claim, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3 to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.

11. A method according to any preceding claim, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64% manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.

12. A method according to any preceding claim, comprising providing a second rotor element having a composition substantially the same as the said rotor element and welding the said second rotor element to the said rotor element using the said weld metal.

13. A method according to any preceding claim, wherein the said welding process is a submerged-arc welding process.

14. A method according to any preceding claim, wherein the said method comprises a step of machining a rotor component to form at least one of the said rotor elements.

15. A method according to any preceding claim, comprising a step of machining the said weld metal after the weld has been formed.

16. A rotor for a turbine, comprising a rotor element and weld metal welded to the said rotor element; wherein the weld metal comprises from 0.04 to 0.1% carbon, from 0 to 0.5% silicon, from 0.1 to 0.6% manganese, from 0 to 0.01% sulphur, from 0 to 0.03% phosphorous, from 1.9 to 2.6% chromium, from 0.05 to 0.3% molybdenum, from 0.2 to 0.3% vanadium, from 0.02 to 0.08% niobium, from 1.45 to 2.1% tungsten, from 0 to 0.03% nitrogen, from 0.0005 to 0.006% boron and from 0 to 0.03% aluminium.

17. A rotor according to Claim 16, wherein the said weld metal comprises at least 0.06% carbon.

18. A rotor according to Claim 16 or 17, wherein the said weld metal comprises at least 0.3% manganese.

19. A rotor according to any of Claims 16 to 18, wherein the said weld metal comprises 0.005% or less sulphur.

20. A rotor according to any of Claims 16 to 19, wherein the said weld metal comprises at least 1.7% tungsten.

21. A rotor according to any of Claims 16 to 20, wherein the said weld metal comprises at least 0.04% niobium.

22. A rotor according to any of Claims 16 to 21, wherein the said weld metal comprises 0.02% or less nitrogen.

23. A rotor according to any of Claims 16 to 22, wherein the said weld metal further comprises 0.5% or less nickel.

24. A rotor according to any of Claims 16 to 23, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017% phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.

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25. A rotor according to any of Claims 16 to 24, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3 to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.

26. A rotor according to any of Claims 16 to 25, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64% manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.